

IN THE DRAWINGS

Replace Figure 1 with revised Figure 1.

REMARKS

Entry of this amendment and reconsideration of this application, as amended, are respectfully requested.

Referring to point 2 of the office action "in vacuo" is correct. Nonetheless, this term has been replaced by "in a vacuum".

It is believed that the amendments to the specification and claims overcome the objections set forth at pages 2-3 of the office action.

Claims 1-7, 9-15 and 17-18 were rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over Morrison in view of Lehan and Hughes. Applicants respectfully traverse.

With respect to claim 1, Morrison relates to an improved multiple field source sputtering device having a closed plasma loop including two paths, the first of which is a sputtering path disposed over the cathode and the second of which is a non-sputtering return path disposed above the first (col. 1, lines 66-69 to col. 2, lines 1-2). Morrison, therefore, does not relate to the present invention, because the present invention relates to a magnet system moved in an oscillating manner relative to a target.

Morrison refers to a sputter arrangement with a magnetron and a target with at least one outer magnet surrounding at least one inner magnet (figure 5). This sputter arrangement also forms at least one closed plasma tube between the inner and the outer magnet (abstract, lines 10-14). In figure 5, however, only magnetic fields 48, 50, 52 are shown, and not a plasma tube. Two regions of a plasma tube are, therefore, not disclosed by Morrison.

Furthermore, movement of the magnetron and the target relative to each other is also not disclosed by Morrison.

Furthermore, Morrison does not disclose the parameters “d”, “B”, “C” and the path (= “W”), since these parameters refer to a plasma tube of an arrangement wherein the target and the magnet system are moved relative to each other.

Lehan should not be combined with Morrison because Morrison does not teach a relative movement between the target and the magnet system. Lehan also does not disclose a relative movement but a magnetron that narrows the plasma racetrack at the ends in the direction along the rotation of the cylindrical target. A rotation and a relative movement are not the same types of movement, because when moving a magnet system to a planar target the movement must be stopped once in a while and then be accelerated again, which is not necessary for a target which is turned around a magnet portion (see Lehan, page 6, lines 16-25).

Hence, Lehan refers to different dimensions and contrary to the examiner’s assertion, “ W_L ” is not “d” and “ D_P ” is not “ $B/2$ ”.

For example, Lehan distinguishes between “ W_L ” and “ W_e ” (see figure 2c and page 8, lines 17-20). According to the present application “d” always has the same dimension), because the magnet system is moved relative to a planar target. There is no movement involving a rotation of the target around the magnet system. Because the movements are not of the same type, the parameters cannot be compared to each other.

Also, “ D_P ” is not “ $B/2$ ” as asserted by the Examiner.

To assist the Examiner, Applicant provide the Examiner with a table containing all the parameters of the present invention and Lehan. A comparison of these parameters shows clearly that because of the different movements, Lehan has little to do with the invention.

Invention	Lehan	Disclosed by Lehan
$C + d$	D_r	Fig. 1 only
B	$2 \cdot D_T$	Fig. 2A only
B	D_p	Fig. 2B only
-----	D_C	Fig. 2B only
B	D_{en}	Fig. 2C only
d	W_L, W_e	in all figures
C	$2 \cdot S + W_L$	in all figures
-----	T	in all figures
A	-----	not specified

For the equation $B \leq d \cdot 2$ using Lehan's terms B is equivalent with $C + d$, so that

$D_r \leq 2 \cdot W_L$ (Lehan) or $C + d \leq 2 \cdot d$ (presently claimed invention). Thus, C is $C \leq d$. However, C is not B so that according to Lehan it is $C \leq d$, not $B \leq d$ (claim 1).

Thus, it would not have been obvious to combine Lehan with Morrison because Lehan discloses a completely different movement, hence the dimensions of the parameters are also different.

Hughes discloses a sputtering magnetron but does not teach anything about distances or diameters of a plasma tube.

A combination of these documents does not, therefore, teach or suggest each feature of the presently pending claim 1.

As to claim 2, as pointed out above, Morrison does not disclose all features of claim 1. Claim 2 differs from claim 1 in that its features are different, yet, the features of claim 2 also refer to the different parameters of a plasma tube, which are not disclosed by Morrison. According to the presently claimed invention, for the path $(= W) > C$ the width "B" must fulfill the condition $B \leq 2d$. This is not taught or suggested by Lehan, however, so that the subject-matter of claim 2 is also not taught or suggested by the asserted combination.

The Examiner cites Hughes, *inter alia*, for disclosing the use of a moving magnetron relative to target and plasma race-track. Hughes, therefore, does not overcome the above-noted deficiencies.

With respect to the rejection of claims 8 and 16 under §103(a), it is not believed that Tsukasa remedies any of the foregoing deficiencies.


In view of the foregoing, it is respectfully submitted that all rejections should be withdrawn.

Entry of this amendment is respectfully requested.

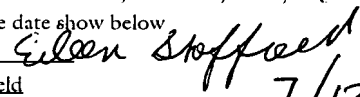
If any fees are due for entry of this amendment, authorization is given to charge deposit account no: 50-0624.

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